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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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09/990,427

11/14/2001

David Botstein

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02/13/2007

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EXAMINER

CHERNYSHEV, OLGA N

ART UNIT

PAPER NUMBER

1649

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
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3 MONTHS

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| | | | |
|------------------------------|---------------------------------------|--|--|
| Office Action Summary | Application No. 09/990,427 | Applicant(s) BOTSTEIN ET AL. | |
| | Examiner Olga N. Chernyshev | Art Unit 1649 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 119-123 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 119-123 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Applicant's reply

1. Claims 119-123 are pending and under examination in the instant office action.
2. The Text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Any objection or rejection of record, which is not expressly repeated in this action has been overcome by Applicant's response and withdrawn.
4. Applicant's arguments filed on December 07, 2006 have been fully considered but they are not deemed to be persuasive for the reasons set forth below.

Claim Rejections - 35 USC § 101

5. Claims 119-123 stand rejected under 35 U.S.C. 101 because the claimed invention is drawn to an invention with no apparent or disclosed specific and substantial credible utility for those reasons of record as specifically articulated in the prior office actions of record.

At pages 2-4 of the Response, Applicant presents additional arguments to support the position that measurement of mRNA levels is predictive of corresponding protein levels. Specifically, Applicant criticizes publication of Anderson et al. stating that "Anderson et al. have observed a correlation coefficient of 0.48 between protein and mRNA abundance. As shown, for example in Chen et al., [...] correlation coefficients over 0.25 are deemed to be significant". Applicant further states that two declarations of Dr. Polakis and publications submitted with the previous IDS (abstracts of 148 references total) "support Applicant's assertion, in general, that changes in mRNA level generally lead to corresponding changes in the level of the expressed

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protein” (p. 4 of the Response). Applicant’s arguments have been fully considered but are not persuasive. The Examiner has already fully addressed the issue of accuracy of predictability of gene amplification data to protein abundance in the previous communications of record.

As an essential matter, it is noted by the Examiner that Applicant’s response is absolutely silent with respect to the main argument presented by the Examiner, which is the total lack of explanation presented in the instant specification as why one skilled in the art would consider a DNA, which is slightly amplified (1.13 to 1.35-fold) only in 35% of samples of cancerous lung tissue and not changed in 65% of cases, to be useful as a marker for lung cancer. The Examiner maintains the position that based on the information provided, one would reasonably conclude that the instant disclosed DNA could not possibly serve as a cancer marker because it would more likely than not (65% as compared to 35% cases) fail to identify lung cancer cells.

Consequently, if PRO830 DNA was not changed in 65% of reported samples, there appears to be no need to predict the levels of PRO830 protein in cancerous tissue, which are diagnostic of cancer, and further to extrapolate these data into the use of the currently claimed antibodies.

In order to be patentable, an invention must be useful in currently available form. In the instant case, the instant specification presents a disclosure of a novel naturally occurring polypeptide, encoded by DNA, which is found to be amplified in five out of fourteen samples of lung cancer as compared to corresponding pooled DNA levels in blood of healthy subjects (Table at p.550 of the instant specification), and asserts the use of the antibodies that bind to the encoded protein as lung cancer markers. There is no disclosure of the elevated levels of the protein specifically associated with lung cancer and no reasonable explanation as how to use the instant claimed antibodies to diagnose lung cancer considering that the factual evidence, 65% of

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samples examined showing no change in DNA level in cancerous tissue, clearly contradicts Applicant's assertion of the use of the instant molecules as cancer markers. Moreover, the disclosure fails to provide any information regarding the samples of cancerous tissue, such as protocol of obtaining, identification, size, cancer type and stage etc., which is essential for a routine practitioner. Thus, in order to use the instant antibodies to identify lung cancer in tissue samples, one skilled in the art must perform a significant amount of further research with no reasonable expectation of success in view of the total lack of supporting evidence.

The Examiner maintains that the instant claimed antibodies that bind PRO830 polypeptides lack specific, substantial and credible utility and are not enabled as cancer markers or as future therapeutic agents/targets because the instant specification, as filed, fails to provide any evidence that the instant PRO830 polypeptides are specifically associated with lung cancer. The presented mRNA data regarding PRO830 expression in lung cancer samples fail to delineate a specific and substantial credible utility that is commensurate with an inventive contribution, and, therefore, the instant rejection is maintained.

Claim Rejections - 35 USC § 112

6. Claims 119-123 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a clear asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Conclusion

7. No claim is allowed.

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8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga N. Chernyshev whose telephone number is (571) 272-0870. The examiner can normally be reached on 8:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet L. Andres can be reached on (571) 272-0867. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Olga N. Chernyshev, Ph.D.
Primary Examiner
Art Unit 1649

February 9, 2007